

*Amendments to the Specification*

Page 1, please amend Paragraph 1 as follows:

The present invention relates generally to improved apparatus and methods for mapping pulse widths in digital modulation circuits, ~~and includes particular applications of these circuits to digital modulators of a type useful in high fidelity audio processing.~~

Page 2, please delete Paragraph 8.

Page 3, please amend Paragraph 9 as follows:

In an embodiment, a modulator circuit receives a modulator input signal and produces a mapper output signal. The modulator circuit includes a filter circuit that generates an output that is a function of the modulator input signal and of the mapper output signal. A quantizer receives the filter output signal and produces a quantized representation of the filter output signal. A mapper receives the quantizer output and generates the mapper output signal. These improved methods and circuits are particularly useful in the context of high-fidelity digital modulator circuits, and in combination with other novel features developed by the same inventor for such circuits. As disclosed herein, the inclusion of the mapping function in the circuit's main feedback loop is optionally and advantageously combined with particular improvements in sequence mapping methods and spectral shaping of a dither signal.

In the Abstract of the Disclosure:

Please amend the Abstract as follows:

A modulator circuit receives a modulator input signal and produces a mapper output signal. The modulator circuit includes a filter circuit that generates an output that is a function of the modulator input signal and of the mapper output signal. A quantizer receives the filter output signal and produces a quantized representation of the filter output signal. A mapper receives the quantizer output and generates the mapper output signal. ~~In a high-fidelity digital modulator circuit, a mapping function is performed within a main feedback loop of the modulator, rather than after the feedback loop. Pulse width modulation mapping in such circuits generates a fairly large harmonic content when cascaded with the digital modulator circuit and tends to dramatically change the shape of the noise floor in the desired band, e.g. 0-40 kHz. Placing the mapping function within the high-gain digital modulator feedback loop tends to compensate for the non-linear features of the mapping function, thus reducing harmonic generation and simplifying the task of suppressing harmonic generation to an acceptable level. In addition to reducing harmonic generation, this arrangement simplifies feedback processing and the accumulation of feedback information within various integrators in the modulator circuit.~~